

**TITLE OF THE INVENTION**

**A METHOD AND APPARATUS TO OUTPUT ELECTRONIC MAIL ACCORDING TO DEGREE  
OF IMPORTANCE**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application claims the priority of Korean Patent Application No. 2003-377, filed January 3, 2003, in the Korean Intellectual Property Office, the disclosure of which is incorporated herein in its entirety by reference.

**BACKGROUND OF THE INVENTION**

1. Field of the Invention

**[0002]** The present invention relates to a method and an apparatus to output electronic mail (e-mail) in an e-mail facsimile machine that sends/receives e-mails, more particularly, to a method and an apparatus to output e-mails according to the importance of the e-mails by assigning degrees of importance to the e-mails, and sending the e-mails using an e-mail facsimile machine.

2. Description of the Related Art

**[0003]** Facsimile machines send still images via communication channels by converting the still images to electrical signals, and reproduce copies of the received images using a thermal transfer recording device or an electrostatic recording device. Similar to a copy machine, a receiving unit in a facsimile machine reproduces copies of the received images using the thermal transfer recording device or the electrostatic recording device. A scanning unit, such as an image detection device, detects original images and converts the original images into electrical signals using a similar operation as an electronic camera. The scanning unit uses a linear Charge Coupled Device (CCD) or an arrangement-type optical diode. A recording unit reproduces the original images from the received electrical signals, and prints the reproduced images.

[0004] Generally, conventional facsimile machines use telephone lines as communication channels; however, e-mail facsimile machines that function in an Internet environment have been provided as a result of the development of Internet communications.

[0005] When an e-mail facsimile machine sends e-mails to a sending server, the sending server sends the e-mails to a receiving server over the Internet. An e-mail facsimile machine as a recipient of the e-mails sent, requests the e-mails from the receiving server at specific time intervals and prints the e-mails.

[0006] Accordingly, since a large number of e-mails that are received by the receiving server are continuously printed at specific time intervals, it becomes difficult for a user to sort out the e-mails and identify the e-mails with important content. Thus, the user has to view the printed e-mails one by one and spends a large amount of time identifying and locating a specific e-mail.

## SUMMARY OF THE INVENTION

[0007] An aspect of the present invention provides a method of outputting e-mails according to the degrees of importance of the e-mails, and printing the e-mails based on the degrees of importance.

[0008] The present invention also provides an apparatus to output e-mails according to the degrees of importance of the e-mails, and prints the e-mails based on the degrees of importance.

[0009] In accordance with an aspect of the present invention, a method of outputting electronic mails (e-mails) according to the degrees of importance of the e-mails in an e-mail facsimile machine that sends/receives e-mails is provided. The method of outputting the e-mails further comprises: determining the degrees of importance of the e-mails; receiving via a network the e-mails whose degrees of importance are determined; separating the degrees of importance of the received e-mails; and printing the e-mails whose degrees of importance are separated into groups in accordance with the degrees of importance.

[0010] Additional aspects and advantages of the invention will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the invention.

[0011] According to another aspect of the present invention, an apparatus to output e-mails according to degrees of importance of the e-mails in an e-mail facsimile machine that sends/receives e-mails is provided. The apparatus further comprises: a degree of importance determination unit that determines respective degrees of importance of e-mails and outputs the e-mails whose degrees of importance are determined; an e-mail sending/receiving unit that sends/receives the e-mails whose degrees of importance are determined; a degree of importance separation and process unit that separates the e-mails received from the e-mail sending/receiving unit into groups of varying degrees of importance and outputs the e-mails whose degrees of importance are separated into groups; and a degree of importance separation and print unit that prints the e-mails whose degrees of importance are separated into groups, corresponding to the degrees of importance.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0012] These and/or other aspects and advantages of the invention will become apparent and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompanying drawings of which:

FIG. 1 is a flowchart to explain a method of outputting e-mails based on their degrees of importance, according to an aspect of the present invention; and

FIG. 2 is a block diagram to illustrate an apparatus to output e-mails based on degrees of importance, according to another aspect of the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] Reference will now be made in detail to the embodiments of the present invention, examples of which are illustrated in the accompanying drawings, wherein like reference numerals refer to the like elements throughout.

[0014] FIG. 1 is a flowchart to explain a method of outputting e-mails based on degrees of importance of the respective e-mails, according to an aspect of the present invention, the method includes separating e-mails whose degrees of importance are determined and printing or displaying the e-mails in operations 10 through 40.

[0015] First, degrees of importance of e-mails are determined in operation 10. For example, the degrees of importance of e-mails can be separated into three groups: most important,

important, and ordinary. When necessary, the degrees of importance of e-mails can be sub-separated. When users who send the e-mails assigns the degrees of importance to the e-mails, the degrees of importance of the e-mails are determined in accordance with the assignment given by the users.

[0016] After operation 10, the e-mails whose degrees of importance are determined are received via a network in operation 20. The e-mails are received via a network, such as the Internet, and stored in a receiving server. The e-mail facsimile repeatedly connects to the receiving server periodically and receives the e-mails from the receiving server.

[0017] After operation 20, the degrees of importance of the received e-mails are separated in operation 30. In other words, the degrees of importance of the e-mails received by the e-mail facsimile machine are separated in accordance with the degrees of importance of the e-mails determined in operation 10.

[0018] After operation 30, the e-mails are printed based on the respective degrees of importance or brief information regarding the e-mails is displayed in operation 40. An example of printing the e-mails based on the respective degrees of importance is storing the printed papers in separate bins according to the degrees of importance of e-mails. When a plurality of bins are arranged, the most important e-mails may be output to a first bin, the important e-mails may be output to a second bin, and the ordinary e-mails may be output to a third bin. Thus, the user can easily separate the e-mails in accordance with the degrees.

[0019] Another example of printing the e-mails based on the degrees of importance includes generating different alarms according to the degrees of importance while printing the e-mails or printing on the paper where the e-mails are printed with specific marks according to the degrees of importance.

[0020] An example of displaying brief information on the e-mails includes sequentially arranging the brief information on the e-mails according to the degrees of importance of e-mails. Thus, the user can easily recognize the degrees of importance of the e-mails and determine the e-mails that need to be printed.

[0021] FIG. 2 is a block diagram to illustrate an apparatus to output e-mails based on their degrees of importance, according to an aspect of the present invention. The apparatus includes

a degree of importance determination unit 100, an e-mail sending/receiving unit 120, a degree of importance separation and process unit 140, a degree of importance separation and print unit 160, and a degree of importance separation and display unit 180.

**[0022]** In order to perform operation 10, the degree of importance determination unit 100 determines the degrees of importance of the e-mails and outputs the e-mails. The degree of importance determination unit 100 receives the degrees of importance of e-mails that are assigned by a user through an input terminal IN1 and determines the degrees of importance of each e-mail using information that can be recognized by e-mail facsimile machines. The degree of importance determination unit 100 outputs e-mails whose degrees of importance are determined to the e-mail sending/receiving unit 120.

**[0023]** In order to perform operation 20, the e-mail sending/receiving unit 120 sends/receives e-mails whose degrees of importance are determined. When the e-mail sending/receiving unit 120 receives the e-mails whose degrees of importance are determined from the degree of importance determination unit 100, the e-mail sending/receiving unit 120 sends the e-mails to an e-mail sending/receiving unit 120 of another e-mail facsimile machine through an output terminal OUT1.

**[0024]** In addition, the e-mail sending/receiving unit 120 of the e-mail facsimile machine receives e-mails sent from the other e-mail facsimile machine through an input terminal IN2, and outputs the received e-mails to the degree of importance separation and process unit 140. In other words, the e-mail sending/receiving unit 120 serves as an interface between e-mail facsimile machines that send/receive e-mails.

**[0025]** In order to perform operation 30, the degree of importance separation and process unit 140 separates the e-mails received from the e-mail sending/receiving unit 120 according to the degrees of importance and outputs the separated e-mails. Here, the degree of importance separation and process unit 140 separates the e-mails that have determined degree of importance in the determination unit 100 into groups of varying degrees of importance ranging from most important e-mails to ordinary e-mails. For example, when the degrees of importance of e-mails are separated into three groups ranging from most important, to important, to ordinary, the e-mails are separated according to their degrees of importance determined in the degree of importance separation and determination unit 100. The degree of importance

separation and process unit 140 outputs the e-mails whose degrees of importance are separated to the degree of importance separation and print unit 160 and the degree of importance separation and display unit 180.

**[0026]** In order to perform operation 40, the degree of importance separation and print unit 160 prints the e-mails whose degrees of importance are separated into groups of varying degrees of importance. In other words, the degree of importance separation and print unit 160 receives from the degree of importance separation and process unit 140 the e-mails whose degrees of importance are separated into groups, and prints the received e-mails corresponding to the separated degrees of importance.

**[0027]** For example, printing the e-mails based on the degrees of importance involves printing e-mails on paper and storing the printed papers in separate bins according to the degrees of importance of e-mails. When a plurality of bins are arranged, the most important e-mails may be output to a first bin, important e-mails may be output to a second bin, and ordinary e-mails may be output to a third bin. Thus, a user can easily separate the degrees of importance of the e-mails.

**[0028]** Another example of printing the e-mails based on the degrees of importance includes generating different alarms according to the degrees of importance while printing the e-mails or printing specific marks on the paper on which the e-mails are printed according to the degrees of importance.

**[0029]** The degree of importance separation and print unit 160 outputs printing signals of the e-mails, corresponding to the degrees of importance, through an output terminal OUT2.

**[0030]** In addition, in order to perform operation 40, the degree of importance separation and display unit 180 displays brief information regarding the e-mails whose degrees of importance are separated into groups which corresponds to the degrees of importance. In other words, the degree of importance separation and display unit 180 receives the e-mails whose degrees of importance are separated into groups, from the degree of importance separation and process unit 140, detects the brief information on the e-mails, and displays the detected brief information corresponding to the degrees of importance.

**[0031]** For example, the degree of importance separation and display unit 180 may sequentially arrange the brief information on the e-mails in the order of the degree of importance. The degree of importance separation and display unit 180 outputs display signals of the brief information on the e-mails through an output terminal OUT3. The degree of importance separation and display unit 180 may be a Liquid Crystal Display (LCD).

**[0032]** Although a few embodiments of the present invention have been shown and described, it would be appreciated by those skilled in the art that changes may be made in this embodiment without departing from the principles and spirit of the invention, the scope of which is defined in the claims and their equivalents.